

Aviation News

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DECEMBER 27, 1943



Bomber Builder—P. G. Johnson, head of Boeing Aircraft, builder of famed Flying Fortress and new upcoming super-bomber, next week will become president of National Aircraft War Production Council, as well as head of Aircraft War Production Council, West Coast.

War Plants Adequate, Says Nelson

WPB chief reports 1943 plane factory construction is 35 percent below last year.....Page 21



Rush South American Engine Plant

Brazil factory expected to go into production on Wright Whirlwinds early in 1944.....Page 20



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Craft performing heavy duty, mostly on routes in Latin America, according to firm's report...Page 14



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Opposition to roads' entry in air transport field studied for labor interest involved.....Page 27



Research Bases Test Warplanes

Army and Navy put new aircraft through battle paces at special proving grounds.....Page 16



OWI Reports Airlines' War Roll

Public told of industry's vital transport, modification, and trainingPage 7

Washington Observer



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EQUIPMENT

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

THE WRIGHT DINNER—The gathering in Washington honoring Orville Wright on the 10th anniversary of the historic flight at Kitty Hawk was an historic occasion. Leaders in every line of aeronautical endeavor were on hand. It was a brilliant affair and, as many of the guests remarked afterward, the hit of the evening was made by Orville Wright himself. Mr. Wright, of course, gave master speeches.

THE COLLIER TROPHY—A high light of the evening was the award of the Collier Trophy to Gen. Arnold. He has built a combination of men and planes into the most powerful Air Force the world has seen. As the general noted, the Army Air Force is one component of America's military service that has been in continuous contact with the enemy every day since that savage attack at Pearl Harbor. The general commented, in accepting the award that, in adding his name to the roster, the National Aeronautic Association, repository of the trophy, honors every man and woman in the Army Air Force.

FLIES FEW—Although speeches were at the head table, short snouts showed only three were visitors—Mr. Wright, Gen. Arnold and Admiral King. Perhaps there were others, certainly there were others in the large audience who deserved a place at the table of honor and should have been there.

PRESIDENT MISINFORMED—President Roosevelt, in his message read at the dinner, said in part: "I am told they (the Wright Brothers) tipped a can to see which one would attempt the flight. Orville won the toss and was the first to feel the thrill of flying." Orville Wright's own story of the flight and events leading up to it tells how the brothers tossed a coin and the toss was won by Wilbur. Wilbur's first attempt, from the side of Killbuck Hill, was unsuccessful and the plane settled to the ground at the foot of the hill, suffering minor damages. After two days of repairs, the plane was again ready for a flight attempt, which was made on level ground, and this time it was Orville's turn, resulting in the first of their four successful flights on Dec. 17, 1903.

"SELECTIVE RECONVERSION"—Never so good a phrase and program at WPA Chairman Donald M. Nelson is "selective reconversion." This is significant in more ways than one—particularly that the WPA is now definitely thinking in terms

of reconversion, a thought taken until recently selective reconversion means, in effect, that reconversion will start in areas where the manpower situation will not hinder the war production program. There appears little doubt that 1944 will see an accelerated reconversion of some war industries, starting slowly and increasing in tempo during the year. Nelson has indicated that reconversion already has started in some lines and he believes that WPA, with its industry committees, is the agency to direct it.

PRODUCTION DATA RELEASED—WPA's new policy of releasing production data is an indication of the reconversion trend, to keep industry advised. Of interest to the aircraft industry are plans for clearing information on monthly shipments by types of aluminum castings, aluminum ingots, magnesium ingots and stocks of softwood plywood. Figures on shipments of critical materials under CMP also are being released for release. Board officials believe manufacturers must have the coordinated fundamental facts of details of the war production program to aid them in the reconversion task.

WAR PAINT OFF—As noted in "Auction News" last week, the AAF has ordered removal of war paint from almost all of its aircraft. Lockheed's P-38 "Lightning," shown here, is believed



to be the first to shed its dark coat and henceforth will strike in gleaming silver. The dark spots are anti-glare patches of dark lacquer on

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DECEMBER 27, 1943

OWI Report on U.S. Airlines Says 14 Fly Foreign Routes

First official roundup of air transport industry's war operations by 21 companies is released to press.

By ROBERT H. WOOD

The first comprehensive description of the "highly strategic war roles" played by the U. S. air transport industry was released to the press last week by the Office of War Information.

Although industry people have been familiar with the airlines' participation since they were organized for the Battle After Pearl Harbor, the public generally has been permitted to have little in the way of information on the scope of operations.

Airlines Data Used—The 13-page monograph report was written by James Aswell, of OWI's writers' staff, and was compiled from data gathered from the individual airlines and from War, Navy, CAB, and Air Transport Association.

Numerous passages from the original version of the report, without military importances, were blue penciled by an assistant on the staff of the Army's Air Transport Command. The report was held up in the same office for some days. For a time, realization was so strong in this office against any report that OWI had difficulty getting behind approval to start it. The Navy cooperated fully. The report was edited and written by OWI as the result of an editorial in *American News*, Aug. 14.

Contract Airlines—"The NATS ones reach to its contract airlines (Pan American and American Express)," the Navy's Air Transport Service told OWI. "Intimate operation and organization of NATS squadrons is modeled on Naval usage, coupled with the best commercial practice. It is with reference to personnel, however, rather than to any other particular, that NATS is involved in the airlines. An early call sent out to the airlines brought

into the service a nucleus of highly trained and experienced airlines personnel."

Mr. Gen. Harold I. Grew, ATC commanding general, said of the lines: "If it had not been for their wholehearted cooperation, it would have been nearly impossible for us to carry on the job in the way it has been done."

Geostated Aircraft Fleet—The work of the 18 domestic lines, including Hawaiian, and the three international companies, has resulted in cross-

line and operation of the "greatest fleet of world-girdling transport aircraft in existence."

Fortieth companies, including Consolidated Vultee Aircraft Corp., are flying internationally. They are Pan American, American Export, Braniff, American, Eastern, Northwest, TWA, Northeast, United, Western, Pan American-Grace, Hawaiian, and Colonial. No information on their individual routes was approved for publication, although this material has been published at one time or another in national magazines. Four routes were mentioned—North Atlantic, Africa-India-China, South Pacific, Alaska-Alaska. These companies, as well as the other domestic lines, also are flying military cargo schedules in this country. This paper also was barely mentioned.

No Basic Poles—"There is no basic pole about flying ocean," the report quotes a pilot. "Men have to be skilled and machines efficient, but flying is flying and navigation is navigation, whether it's over land, sea, mountains, or deserts."

Greatly increased commercial service of the lines this year, despite loss of a third of their flying personnel and half of their planes to the services, was due to aircraft loads of 80 to 100 percent instead of 55 percent last year, to more non-military maintenance and to repair and due to fewer types of aircraft, in flying planes 16 to 18 hours a day instead of 8½, as in 1941 (1,725 miles per plane instead of 1,160), to fewer stops and schedules, and to personnel and equipment generally.

Safety Devices—"New safety devices have 'vastly improved existing ones,' but most are still secret, although application to postwar aviation 'will bring revolutionary changes,'" OWI says.

Training activities of 18 airlines for the services involved organizing the Airlines War Training Institute, which correlated and standardized instruction; training of military personnel. Nineteen of the companies gave instruction, including twin-engine courses for pilots, training of navigators, radio operators, mechanics and meteorologists, and transport work. The flight train-

Aided Aleutians

Reliefing of the Aleutians by the U. S. would have been postponed for months if ten airlines had not rushed men and cargo quickly and in great quantity, the OWI report on the airlines' war work discloses.

They transported special troops and military equipment to Dutch Harbor. Airline pilots delivered Army bombers, with their crews and loads. NATS has personnel and material sent to Alaska and Aleutian bases in squadrons of three planes each—sixteen and one familiar with the territory; the other two pilots flying in formation.

Even as the Japanese were attacking Dutch Harbor, airlines were coming in at the airport with war materials. Full evaluation of the airlines' contribution to the successful defense of Alaska will probably have to await the conclusion of the war.

The lines making were Pan American, United, American, Northwest, PCA, TWA, Chicago and Southern, Western, Braniff and Pan American-Grace.



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SOUTHWEST'S CARGO LINE PRAISED:

Southwest Airline completed the first year of all military operation by making up 1,377 scheduled flights and 547,894 miles without loss or damage to cargo. Ted Mitchell, manager of Southwest (right), is congratulated by Brig Gen. Lucas V. Bean (center) and Col. William Cramer, of San Bernardino, Calif., an Air Service Command, who established the service. The record means an increase of 162 percent, in a year, of Southwest's scheduled route mileage, which amounts to almost 15,000 miles a month, and quadrupling of daily flights and installations.

ing for the ATC is nearing an end.

Research and Tests.—"Experimentation and research work of the commercial airlines has been of incalculable benefit to ATC and NATS."

Important improvements have been made on items, wheels, propellers, instruments, accessories, and operations technique. Tests are constantly being made on pressurized cabins and superchargers for high altitude work, lighter fabric and other structural material, packaging, and on safety equipment."

Less bulky packaging, made of strong, specially processed cardboard and fiberboard, have replaced wood and metal wherever possible. Heavy wrapping paper and burlap also are used. . . . The payload of one type of Douglas trim on occasion has been increased from 4,000 to 6,000 pounds by reducing tare weight of cargo.

Space Saving.—A shipment of airplane engines, which by old packaging would have weighed 35,000 pounds and required five or six transporters, was reduced by NATS to 1,600 pounds and shipped in one plane. New wrapping gadgets also have aided.

on all military planes they fly, adding on redesigning or replacements. Tests on new super-fuels are underway, "available in production of today's high octane gasoline."

Modifications.—"One of the most spectacular of the airlines' war contributions" was work done by the modification centers, where "any standard plane can be tailored for a variety of operations under totally dissimilar weather and tactical conditions." P-50s were put on DC-3's, bombers are improved, special jobs prepared for such as Douglas's Tokyo raid with "bugged up" Mitchells, fighters made as all-weather for towing targets, fighter planes are equipped (by Delta) to spray insect poison on swamps, cargo planes become flying hospitals or meteorology labs. Only Continental's \$12,000,000 plant is mentioned.

New World Leaders.—Ocean flying planes sighted ships and survivors. They flew world leaders, including Churchill and Roosevelt. "The President's trip to and from the Casablanca conference was a joint undertaking of ATC and NATS, using Pan American and TWA crews. Emergency cargoes were carried—corpses, babies and planes, anti-aircraft, postoffice, currency to Brazil, as well as service mail. Eastern Air Lines is a "flying weather bureau" issuing bulletins along the east coast.

The report was prepared with approval and cooperation of the Air Transport Association.

War May Determine Brewster Outcome

There is a real concern among the Navy and the House Naval Affairs Committee as to the outcome of the current aircraft competition.

What the Navy may get if advised by the House Naval Affairs Committee to cancel Brewster contracts for Corsair shipboard fighters depends upon tactical developments in the air war. The Committee investigated Brewster's production failure from Oct. 13 to Nov. 30.

Actually the probe is merely suspended, is officially still in effect, which puts the Committee in the unprecedented position of holding surveillance over a combat operation which is in charge of an executive office—the Navy.

"Corsairs" in Demand.—Right now, the Navy needs all the Corsairs it can get, but weeks or months from now, when the Committee is to do so, it might give its output from the Brewster plant, Pa.,

plant, from Vought and Goodyear for more Corsairs than they are now delivering, and assign more facilities to production of the newer Grumman Hellcat. But what the fabric problem will be cannot be determined exactly, until the contest on Japan is further developed.

The Committee has an executive authority to order the Navy to cancel out of Brewster. But actually the power of Congress is unlimited because it controls authorization and appropriations.

May Report in DPC.—If Navy drops the Brewster's \$10,000,000 Johnsonville plant possibly would revert to the Defense Plant Corp., which financed it. The Long Island plant would become eligible for new jobs, but its DPC-owned tools and other facilities would be taken out. The Brewster plant at Newark Airport, a converted hangar, does not figure in the Corsair picture, it takes big points for Consolidated-Vultee.

Congressional spokesmen admit they have thought of turning the Johnsonville plant over to some other management, with a high performance requirement, but they may still possibly not be producing Corsairs. There is no selection whatever on the Vought-designed fighter; Navy repairs its work constantly.

Fast Analysis.—The Congressional report on Brewster is signed by Rep. P. H. Dewey, chairman of the Naval Affairs Subcommittee which made the week-long study. It is a thorough in its criticism of a long series of Navy management, analyzing the faults of succeeding presidents. It says the Navy failed to take prompt and vigorous steps to remedy the difficulties when production balance was brought to its attention.

"It is plain that the major responsibility for the failure of production of Brewster rests with the short-sighted senior leaders. . . . The report states, and it says that Thomas DeLoevemo, leader of Local 945, whose real name is Harry Potter, is a "half-confused, pretentious, openly contemptuous of his country's laws, and of the Navy."

Ten Recommendations.—The Committee makes ten recommendations in detail to the Navy and other federal agencies involved, and it suggests that the Navy and the War Labor Board write a new labor contract for Brewster and its 15,000 workers. It requests a monthly report from the Navy itself on Brewster's production, on the schedule, on acceptances and deliveries, on power utilization, and on any disturbances that may occur.

The report says that Brewster never succeeded in getting mass production of Corsairs. In August, 1943, it had delivered only 4 airplanes. The original order was for 181 airplanes, that was increased later to 300, and last March another 2,000 were added. The first delivery was ten months behind schedule, in August this year. The SRA diversion program, if it had not been cancelled in November, would have been completed last December, 10 months late, after the plans had become obsolete. Some of them were even assigned to combat.

Army Chief Analyzes Helicopter Outlook

Gregory, Wright Field, sees popular use delayed by high cost and operation difficulties.

The helicopter, a favorite buzzword topic for armies and laymen alike, is not ready yet for the average man, in the opinion of Col. H. V. Gregory, chief of rotary-winged aircraft development, Wright Field.

Gregory suggests that automatic push-button controls may be the solution to make the helicopter a fast flyer or that the man-in-the-seat easily, but until some such development comes along the rotary-winged aircraft takes too much coordination of controls for any but an expert.

Addresses SAE.—Col. Gregory, speaking before the Southern Ohio

section of the Society of Automotive Engineers, said automatic control development was not totally essential, but that it was not just avoided the corner.

"Way anybody should think that a helicopter, which does anything an airplane can do and besides that, can fly sideways, backwards and upwards and descend vertically, should be easier to fly than a conventional plane is hard to understand," he said.

Production Problem.—It is Gregory's opinion that it will take "feasible production" to get even a two-place helicopter down to the cost of an expensive automobile, and a family-sized helicopter will be considerably more expensive, since it probably will require about a 300 hp. engine.

Gregory, who has been flying helicopters since 1938 and who was the second man to fly the original Sikorsky helicopter, pointed out that besides operating conventional rudder and stick controls, the helicopter pilot must coordinate throttle and pitch control of the rotor, and must coordinate rudder with instruments and decrease in pitch because of the necessity to counteract torque of the main rotor.

Talks of First Flight.—"I felt just like I was sitting on top of a gravel ball and was having a hard time staying on top," Gregory said, describing his first flight in the first Sikorsky helicopter at Bridgeport, Conn., in 1938, a flight which led to his recommendation for the Army to order larger models.



NEW FIRE EQUIPMENT FOR AAF

A demonstration at Bething Field, Washington, D. C., shows the use of new equipment, built to AAF specifications, in extinguishing fires involving large amounts of high octane aviation gasoline. This development, being adopted for AAF airfields, replaces carbon dioxide in larger quantity and at a high discharge rate, and is incorporated in the airplane crash fire truck produced by General Corp. This fire was put out in 15 seconds. The truck has a capacity of three tons of liquid CO₂ and 300 gallons of water, and to cool the material and atmosphere.

Cek Gregory outfitted helicopter studies dating back to Leonardo da Vinci, pointing out that American Army armies had been interested in helicopter possibilities since 1919, studied on the Cooper Hewitt helicopter. He described the first flight of the old De Balthazar helicopter at

McCook Field, Dec. 18, 1933, as the most successful of its day, and was referred to later tests on the Berliner helicopter, and European developments by Breguet, Sikorsky, Poles, D'Arenzo, and finally the first successful helicopter flown in Germany, the Focke-Adolphs FV-181.

Omnibus Contract Termination Bill Urged to Speed Postwar Settlements

Senator Murray presents preliminary outline of measure which request for clear track when Congress reconvenes in January.

Triple A priority for contract termination legislation by Congress when it reconvenes in January has been urged by Senator James E. Murray, of Montana, who holds that the present confusion on how terminated war contracts shall be settled impedes the progress of the war and threatens the very foundations of our post-war economy.

Murray has submitted to the Senate a preliminary outline of an omnibus contract termination bill calling for a director of Contract Settlement under the Office of War Mobilization, joining with Murray were Senator Harry S. Truman, of Missouri, and Senator Chapman

Revercomb, of West Virginia. Their bill defines in a part of the report made to the Senate Military Affairs committee by a war contract subcommittee composed of the three senators.

Conclusions—While the subcommittee's report emphasized that final conclusions have not yet been reached on specific provisions of the bill, three general conclusions are set forth. They are: An omnibus contract act is called for—instead of "a host of separate, conflicting and ill-related acts." The importance of constant Congressional vigilance over the administration of the legislation is stressed.

Air Exports Gain

Studies by the Foreign Trade Division of the Bureau of the Census show air exports are increasing, both in volume and variety. Eighty-two percent of the value and 73 percent of the volume of the cargo shipped from the country by air during July consisted of medicines, foodstuffs and motor vehicles, electronics and miscellaneous commodities.

Forty-four percent of the exports went on the North American continent, mostly to Cuba and Mexico. South America received 38 percent and Africa 3. The list included shipments by air under Lend-Lease agreements. Government legislation prevented an elaboration.

Responsibility—The legislation must be based on "a delineation of policy that imposes on the Government and the executive agencies the responsibility to provide all business opportunities having claims arising from international war contracts, whether prime contracts, subcontracts or purchase orders with the opportunity to obtain quick, equitable fair settlements and adequate interest financing during the period between termination and final settlement; to protect the interests of small business in contract termination; and to protect the government's interest by preventing overpayments, recovering excess payments and vigorously prosecuting all cases of fraud."

Subcommittees—With regard to subcommittee claims, the contracting agencies are instructed to encourage the prime contractors to negotiate the bulk of the settlement. Where this is not feasible, the contracting agencies—with the consent of the prime—are to deal directly with the sub.

Procedures to be followed with regard to materials on hand and goods in process are outlined in detail. Registration of released manpower with the United States Employment Service is required. Provision is made to coordinate contract settlement with consolidation, to maintain the responsibilities of agencies, to protect the rights of assignees and to handle the problem of informal or defective contracts.

Advance Payments—Mandatory advance payments of at least 35 percent of the amount certified are to be paid to prime contractors within 30 days after application under the proposed legislation. The director of contract settlement is directed to de-

side on the information required in the application and on the type of investigation to be made by the contracting agencies before payment. Any overpayments are subjected to penalty interest and both direct and guaranteed loans are authorized under the proposed bill.

Navy Breaks in Mars As Cargo Carrier

Glenn craft took 13,000 lbs. of Christmas mail to Natal.

There is more behind the recent record-breaking flight of the Martin Mars than an extraordinary performance of the world's largest plane—it is the unflagging confidence of the manufacturer, Glenn L. Martin, and the confidence of the Navy crew which has lived with the craft for more than a year.

There have been many times since the Mars first was projected, originally as a patrol bomber, when many airmen were ready to give up on the giant. She had her growing pains and they were severe and the bugs that beset any new plane were even bigger in the Mars, commercial with her size. The bugs were stubborn. But so were the men who were making the flying boat and as were the Navy men who were working on her and flying her.

4,475 Miles Non-stop—These men must have had more than a modicum of satisfaction when the Mars landed safely at Natal, Brazil, after a 4,475-mile non-stop flight from the Naval Air Station at Patuxent River, Md., and then home again by comparatively easy stages, meanwhile surpassing all existing records for seaborne flight and air cargo transportation.

Mars carried a crew of 16 commanded by Lt. Cmdr. William E. Corey, 37-year-old veteran of Navy flying operations and for ten years a pilot for Eastern Air Lines. His first and second pilots were former Eastern Air Lines colleagues—Lt. Joseph A. Baker and Kenneth W. Winsor, both former Navy flyers, too. Navigator was Lt. L. H. Witherspoon.

Carries Christmas Mail—From Patuxent to Natal, the Mars carried 13,000 pounds of Christmas mail to the armed forces. From Natal, the Mars carried home with stops at Belem, Brazil; Port of Spain, Trinidad; and Bermuda, carrying a record-breaking cargo of critical war materials. From Natal to Belem, the cargo weighed 23,000 pounds, from Belem to Port of Spain, 13,600



Greatest Air Cargo Load. The Martin Mars established four world records on her first war mission, one of which was a non-stop air cargo carrying week. Unloading the plane is a non-stop job. The hatch is hydraulic. Cargo pictured here is being unloaded at Patuxent River, Md., Naval Air Station, after the Mars returned from her non-stop hop to Natal and more leisurely flight with stops on the way home.

pounds, from Port of Spain to Bermuda, 23,800 pounds, and from Bermuda to Patuxent, 27,400 pounds.

Some of the records set by the Mars were: 1. Longest overwater flight, Patuxent to Natal, 2. Greatest air cargo, 20,000 pounds; 3. Heaviest load ever lifted by a plane, 48,500 pounds, gross takeoff from Patuxent

and 4. Longest non-stop cargo flight, **4,475 Miles in 55 Hours**—In all, the Mars covered 4,472 miles in 55 hours and 31 minutes flight time. That, a load of 48,000 pounds of priority war material, as much as ten standard cargo planes could carry, and well over the capacity of a regular freighter, was transported at an hourly average speed of 161 miles per hour. The 32,000-pound load was flown from Belem to Port of Spain, straight over the Amazon jungle, on a routine to Trinidad.

The Mars flight took 29 hours and 55 minutes. All told, the flying boat was gone eight days, during which cargo was carried a distance more than a third the way around the world at the equator.

Tested by Navy—Extensive tests, reported by Aviation News, preceded acceptance of the Mars by the Navy. The flying boat finally was accepted for the Naval Air Transport Service only a few days before an historic flight.

Capt. Donald Smith, U.S.N., head

of NATS, rushed it into war service immediately to test its utility as a cargo plane. Armies on the way side the craft performed excellently throughout the flight. Its cargo and load-carrying ability are expected to contribute heavily to relieve transport of critical cargo.

Texas-Mexico City Night Flights Begun

New directional system set up by American Airlines.

New directional range surveys installed at Mexico City and Monterey by American Airlines have made possible night flights by the company over part of its route from Texas to the Mexican capital. First night flights were started early this month from Ciudad Victoria, Mexico, Monterey to the vicinity of Wink, Texas.

Night Flights—This marks the first official night flights approved by the Civil Aeronautics Administration for a United States airline to make in Mexico, according to Delos W. Ranslett, American's director of communications.

This directional survey is also said to be the first installed in any Latin-American country by a domestic airline.

CAA WAR TRAINING SERVICE FLIGHT INSTRUCTION COURSES (EACH SYLLABUS - 25,000 COUNTRIES)		
CALCULATED YEARS		NUMBER OF COUNTRIES
1939		380
1940	██	47,000
1941	██	57,000
1942	██	70,000
1943	██	150,000

GROWTH OF WAR TRAINING SERVICE

This official chart, released by the Civil Aeronautics Administration, depicts the expansion of the activities of War Training Service during the past twelve months.

Mid-Continent Job Ratings Approved

NWLB Approves Classification of Office and Technical Workers

National War Labor Board unanimously approved the reclassification of a job classification system affecting office and technical workers in four mid-continent aircraft factories.

The companies covered by the approved wage plan are Douglas Aircraft Co. (Tulsa, Oklahoma City and Chicago plants), North American Aviation (Kansas City and Dallas plants), Cessna Aircraft (Wichita plant), and Republic Aircraft Co. (New Orleans plant).

As it will apply to these companies, the job classification system will include 14 labor grades with 135 job classifications. The rate ranges vary from 48-75 cents for trainees to \$1.40-1.75 for the highest grade of skilled technicians. Though not all of the workers will receive increases, the number varying from 35 to 75 percent, the amount of increases, on a plant average, ranges from 1.6 cents to 9.2 cents an hour. Any increases that result are subject

to the approval of the director of economic stabilization.

The Request of Douglas Aircraft for extension of a vacation and sick leave schedule to its office personnel, and for certain skill differentials, was also unanimously approved by the Board to bring these benefits in line with those applying to the factory workers.

A Modification of a group incentive plan proposed by Republic Aviation Corp. to cover all but executive employees at its Farmingdale, N. Y., plant, has been approved by NWLB. About 16,000 workers are affected.

The plan provides for the payment of a bonus calculated after employees have reached 85 percent of the efficiency called for in a standard set by the company. The bonus would be 1 percent of earnings over each percent of efficiency over 85 percent. As originally submitted by the company, the plan had called for bonus payments after 50 percent has been reached.

The Board denied the company's request that it be permitted to change the established standard as conditions warrant. The new plan is to be retroactive to October 1, 1943, but is to be effective only for three months after the date of the Board's action.

NWLB Certified—The Mechanics Educational Society of America as bargaining agent for tool-makers of Northern Aircraft Products division, Aviation Corp., Toledo. At the same plant, UAW-CIO was certified for production and maintenance 400-planters.

War Department adopted a new and liberalized policy governing the release of information concerning the award of construction contracts. Under the new policy exact locations and exact amounts of such awards will be announced. More specific information about the work to be done will also be announced.

Although formerly announcements of contracts and authorizations have included only those projects involving the expenditure of \$1,000,000 or more, they will now be made about contracts involving \$500,000 or more. Further information on any project will be supplied on request, when available, from driven and district engineers.

Engineers earned awards amounting to more than \$1,666,666 were announced by the War Dept. for construction of various sorts at airfields. Both municipal airports and Army airfields received awards. Largest single contract was for the construction of warm-up pads at Gary Airfield, Great Falls, Mont. This will cost approximately \$125,700.74. Two contracts to cost over \$125,000 were awarded to firms for the construction of additional facilities at Berry Field, Nashville, and for construction of temporary fringe buildings at Tyndall Field, Panama City, Fla.

Compensated Scheduling heretofore will be undertaken only after it has been definitely determined that utilization of surplus stocks, definition of order boards, increased production through industry advisory committee procedure have failed to bring requirements in line with productive capacity, in all G. F. E. Components. Col. E. W. Rawlings, administrator of the aircraft scheduling unit at Wright Field, announced the procedure for the components under WPA's general scheduling order M-360. When scheduling is inevitable, the ASU will give advance notice to those affected. Scheduling activity there will cease when cause of shortage have been eliminated.

Three Million has been allotted to Bosch Aircraft Corp., Wichita, by Defense Plant Corp., for additional facilities at a plant in Devine County, Kansas. Bosch had previously received \$850,000 from DPC. An increase in contract with Bosch

Aircraft Corp., Chula Vista, Calif., was also announced by DPC, for additional plant facilities in San Diego County. The cost will be approximately \$11,800, which brings the over-all commitment to about \$4,306,000.

Crafting on aluminum scrap and secondary aluminum ingot at the graduate level were generally regarded as one and one-half cents a pound by the GPA. New base price for secondary ingot is 12 1/2 cents per pound. It is expected that this order will aid in stabilizing the market for secondary ingot, although no change in prevailing material prices will result, as these products have been selling for some time at or below the new ceiling levels.

One exception is the general reduction on secondary ingot is made on "primary grade ingot." This grade is lowered only one-half cent per pound. The reduction on old sheet and trimmings in the scrap classification is likewise reduced only one-half cent. These are the most desirable grades of obsolete scrap, and GPA feared that a further reduction in that level would interfere with the normal flow of this type of scrap. The separate classification for wrought alloys was discontinued by the order, and the maximum price for this grade is now the base price.

War Manpower Commission's Menn disclosed that total U. S. employment offices in 10 major cities will become experimental stations next month for the re-employment of war veterans.

Year-end inventories of the Apprenticeship Training Service, Bureau of Training, WMC, show that 3,268 additional plants have adopted short-term training programs in the twelve months ending November, 1943.

Renegotiation Bill Still Undecided

The question of cost-of-living renegotiation, of vital essence to the aircraft and other war industries, was still unanswered as Congress went back for the holidays in the wake of a sharp rebuffing by Senator George, chairman of the Finance Committee, and Secretary Morgenthau, who, to say the least, do not see eye to eye on this problem.

Changes made by the Senate Finance Committee in the legislative provision of the Revenue Bill "hold the seed of a national scandal" in the opinion of Morgenthau, who said he referred particularly to pro-



Wind Tunnel Demonstration An educational program, sponsored by Curtiss-Wright, is now providing technicians in engine and propeller plants with an "on-the-job" natural training at leading colleges. Photo shows apparatus for wind tunnel and other tests.

visions such as those eliminating from renegotiation the makers of so-called standard articles and the respective "wings" of contractors whose goods do not enter the final product.

Senator George responded by saying that "Mr. Morgenthau knows nothing about the renegotiation of contracts and let about how it is actually administered."

"Morgenthau has said that the changes in the renegotiation program which have been proposed 'will make renegotiation so complex as to be practically unworkable and also will cost the government large amounts'."

George said that Morgenthau's "Renegotiation Bill" contains extreme cases "with exceeding bad grace," that Morgenthau had "failed to take a position on renegotiation and had offered no suggestions or recommendations."

"Mr. Morgenthau not only has failed to take appropriate steps to protect the revenue," George continued, "but has been of no help at all to the Finance Committee concerning renegotiation since it was absorbed into the Revenue Law."

And there the matter rested as Congress quit for the holidays, but it undoubtedly will be taken up again when Congress reconvenes.

Co-Ed Engineers Take Men's Places

Curtiss-Wright counts 650 girls to replace men in plant and propeller plants.

A unique approach to the manpower situation is paying dividends for Curtiss-Wright with employment of 650 women engineering cadets in airplane and propeller plants, from seven colleges.

They were chosen by Curtiss-Wright from thousands of applicants for ten months' intensive training in aeronautical engineering subjects as part of what is believed to be the first engineering program of its kind. They were graduated recently from Rensselaer Polytechnic, Cornell University, Penn State, Purdue University, Iowa State, University of Minnesota and University of Texas.

Assigned directly to engineering departments in nearby plants, these women are performing such duties as detailing in drafting, computing, graph making in stress analysis, and assisting and testing in the materials laboratory and service manual departments and computers in aerodynamics. They have released male technicians to more advanced duties.



SIMPLE DEVICE TESTS FABRIC

Coast Aeronautics Administration has developed and is distributing to its inspectors a mechanical tester for airplane fabric. Similar to a spring center punch, the device applies a center puncher through a dial pad against the fabric with known force. Effect of the blow determines state of fabric. The instrument also serves for testing out pieces of fabric for laboratory testing and does away with the old method of thumb-pressure-plus-experience. In the picture, the tester is being demonstrated by A. L. Morris, chief of the aircraft section of CAA's technical development division.

90 Ford Tri-Motors Still in Operation

Craft performing heavy duty in Latin America, company reports.

Ninety Ford tri-motors—the ship that embodied daring ideas when it came out, notably its all-metal construction—are still in operation, mostly in Latin America.

Ford Motor Co., it is argued to its amazement that Willow Run has sent away more than 1,000 D-24 Liberator bombers, reports that 200 or more were built at Dearborn, Mich., from 1926 to 1935.

Innovations—In describing the tri-motor as “the first successful multi-engine passenger and cargo airplane built,” Ford recalls that, in addition to “innovations” such as full-rate, lower wing and multi-engine equipment when it was introduced, the plane has been an experimental laboratory for subsequent developments like sound-proofing, ventilation, engine cowling, propellers, radiators, and large tires.

The ship's rugged construction and ability to fly heavy loads out of small fields are credited as factors in its Latin-American operation. TACA, using the tri-motor principally for freight, is the largest operator, with 15 of these planes, powered by 620-hp, Wasp C-1 engines. TACA's new Firdis in Nicaragua, four in Costa Rica and three in Honduras have 703,464 miles, logging 9,182 hours, in 1943.

Cuban Routes—Avianca de Colombia has six Firdis on a 5,500-mile route to Central America. Nacional Cubana de Aviacion uses five or 600 miles of Cuban air routes. Four are used by two Pan American airlines in Latin America.

American pairs in operating in scheduled flight for the Island Air Service, an airline and taxi service between Port Clinton, Ohio, and Kelleys, Put-in-Bay, Middle and North Bass islands in Lake Erie.

Ford reports that its tri-motors also are being flown by private owners in many countries, but again mostly in Latin America. Many owned by American oil companies, plantations and mining corporations are used to carry personnel and machinery to otherwise inaccessible fields.

Alaskan Emergency—Ford dispatches a story of its tri-motors in the present war. In answer to a call for help from the Nome garnison last June, after enemy ships were reported headed in that direction, an assortment of commercial planes was commandeered to carry anti-



This Ford flies in Colombia. Reliant unsucessfully times during its long life, this Ford tri-motor now flies through the foothills of the Andes on regular service for Avianca, the national airline of Colombia.

aircraft guns and crew personnel. Two Ford tri-motors were in the group.

“Altogether that day,” says Ford's report, “30 fighters were used, six each of which the faithful lumbering tri-motors ferried as much as six other ships combined.” The task continued for 13 days. In 213 flights, the Nome force was augmented by more than 3,000 tons, 23 officers, and guns, ammunition and military supplies.

Air Medicine to Aid Other Industries

Chief of Wright Field medical laboratory makes forecast for power.

In addition to postwar technological improvements from military developments, General Hospital, aircraft and engines, research now in progress in aviation medicine will contribute materially to man's comfort, health and well being.

This is the opinion of Lt. Col. William Randolph Lovelace, Lt. colonel researcher in the effects of high altitude flights on air crews, and chief of the Aero-Medical Laboratory at the Medical Command, Wright Field. He believes that his new-type oxygen masks developed for high altitude flights by the Army Air Force pilots, for example, may well replace the cumbersome oxygen tents now used to administer oxygen to hospitalized patients, with economy in oxygen as well as more comfort to the patient.

Formerly at Mayo—The former Mayo Clinic assistant, who in civilian life was one of the three men responsible for the development of the first successful aviation oxygen mask, the B-4-B type, shared in the 1939 Collier Trophy award as a result of his major research

Col. Lovelace is perhaps best known for his record parachute jump, his first, from an altitude of more than 40,000 feet, a few months ago in Seattle, from a Flying Fortress, to test by his own experience the reactions of an aviator, equipped with oxygen, in a subatmosphere balloon.

House May Benefit—Electrical and gasoline heating systems developed for planes may have other applications for homes and offices, postwar, he believes. Spartan and regular airplanes requiring specialized clothing for extreme cold as troops best will benefit from research on clothing now worn by aviators.

CIO Urges Big Lightplane Program

Aids mass production of million aircraft to sell for less than \$1,000.

A seven-point program designed for full employment and production in the aircraft industry after the war including development of a light, low-cost, pleasure airplane to sell under \$1,000, has been recommended by Richard W. Frankenstein, director of the CIO United Aircraft Workers' research department and vice-president of the union.

Frankenstein proposed: (1) Development of mass production for 1,000,000 or more light passenger planes to be sold at less than \$1,000; (2) Management, labor and government cooperation toward solution of technical and production problems of putting the aircraft industry into peacetime mass production; (3) Government responsibility for assurance of operation of all government-owned aircraft plants; (4) Participation of labor in all aspects of postwar planning; (5) International cooperation in development of

large-scale transport of freight and passengers; (6) Reduction in price of air transportation to make it available for workers and the average American; (7) Establishment of a 30-hour week throughout the postwar aircraft industry.

Army Tests Bomber Surrendered by Nazi

Wright Field engineers examine Ju-88 landed intact by German pilot.

Mechanics and research engineers at Wright Field are awaiting word of the best way to get to the bottom of an aircraft—had a new German Ju-88 bomber, which a Nam pilot surrendered intact.

In a guarded hangar out of the Air Department's new hangar at Wright Field, Air Force men are leaving Nazi secrets from the German warplane. TheAAF has assembled many a damaged enemy aircraft, but this is believed to be their first complete German bomber.

TWA to Lend Aides To TACA Companies

Company discloses plans in response for CAB approval of Jack Fyfe as Inter-American director.

A closer relationship between Transcontinental and Western Air and Inter-American Airways, holding company in six Latin American airlines formerly completely owned by Lowell Verry, is forecast in an application for Civil Aeronautics Board approval of Jack Fyfe as president and director of TWA and as a director of Inter-American.

It is expected that, if and when the interlocking relationship is approved by CAB, Fyfe will be elected a director and member of the executive committee of Inter-American and will represent TWA interests on the board. Fyfe expects that these duties will not consume more than 5 percent of his time.

May Lead Forward—The application further revealed that TWA has undertaken consideration the possibility of holding 25 percent of the stock of Inter-American and its operating subsidiaries and affiliates to provide for the establishment of American procedures and standards in the companies. Although no definite arrangement has yet been made, one individual already has

been lent by TWA, with Inter-American responsible for the payment of his salary.

Inter-American, which is not an operating company, owns all outstanding stock of Compaia Nacional Taca de Nicaragua, of Transportes Aereos Centro-Americanos, and of Compaia de Transportes Aereos Centro-Americanos de Costa Rica. It also holds 198 out of a total of 200 shares of TACA (El Salvador); 5,880 out of 10,000 shares of Empresa de Transportes Aereos Brasil; 2,000 out of a total of 5,000 shares of British West Indian Airways, and all outstanding stock of Inter-American Airways.

Stock Holdings—Although Fyfe personally owns no stock in Inter-American Airways, TWA holds 235,990 shares of common and 45,000 shares of preferred stock, which constitutes approximately 33 percent of the outstanding shares of each class. This amount is somewhat smaller than the stock interest of Lowell Verry, TACA president. The interest of TWA may be reduced to a maximum of 23 1/2 percent, if further sales of stock contemplated by Inter-American are effected. Under an agreement last October,

TWA bought an interest in the company, it also agreed to purchase from Inter-American 600 shares out of a total of 10,000 outstanding of the stock of Empresa de Transportes Aereos Brasil.

Options—A separate agreement between TWA and Verry provides that TWA shall have an option to purchase all Inter-American stock held by Verry after May 1, 1944, or, previously, from Verry's number, if any, of shares of Inter-American stock necessary to bring the total par value of the shares held by TWA up to an amount equal to the par value of the shares held by Verry.

The agreement further provides that so long as TWA owns at least 10 percent of the voting stock of Inter-American, Verry shall be required to offer TWA any shares he may want to sell TWA, on the other hand, shall have no other option to buy Verry's shares if he voluntarily sells them before he is 55, or if he dies.

TWA also has options to buy any shares of Inter-American offered to Verry that he doesn't want to purchase, provided that TWA's overall stock interest is not reduced to less than 10 percent of the outstanding stock of Inter-American and if, at that time, the number of voting shares held by Verry are less than 60 percent of the total owned by TWA, in which case the options mentioned above shall become inoperative.

Six Directives Issued On Plane Materials

The Operating Committee on Aircraft Materials Conservation of the AAF, Navy's Bureau of Aeronautics, and Air Force Research and Development Office has issued six directives.

Due to lack of anti-direction bearings, it has ordered use of plain and sleeve type bearings or commercial type ground or tapered anti-friction bearings in all authorized applications. Anti-friction bearings can be used in girders, trussing plates, utility plates and in various locations in combat craft. However, precision anti-friction bearings conforming to Navy-Aircraft Specifications type AN-B-4 should be used in the surface control systems of all combat airplanes and large transport planes as well as in other applications where close dimensional requirements possibly be minimum friction indicate their use.

Conservation Directive No. 11, requiring continued conservation reports, is expanded and subject requirements possibly be minimum friction indicate their use.

Physicists means for use in aircraft and aircraft components are less critical since the last conservation order, and are now available in most types for aircraft usage, based on conservation in which plastics materials possess an advantage over other materials for the application.

Effective immediately, all aircraft contractors shall make every possible effort to obtain and use the same primer obtained from spray booth sludge. Specifications are outlined in Conservation Directive No. 12A.

Carbon-bearing corrosion-resistant steel is considered essential for certain vital aircraft applications and has been restricted to applications in aircraft construction where experience has indicated its use is essential. Verry has directed that the steel be used in all parts of the exhaust system coming into contact with exhaust gases, superchargers, valves, and engine or engine accessories parts exposed to temperatures in excess of 500 degrees, and welding rod and electrodes used in welding.

WFB is now investigating the corrosion-resisting steel situation with a view to making recommendations on use in aircraft structures. Until investigation is completed, producers may appeal to WFB, where use of corrosion-resisting steel for structural work is possible, for materials which expose producers to improve aircraft performance.

THE AIR WAR

Services' Proving Grounds Test New Warplanes in Mock Battles

Eglin Field and Patuxent, Maryland, bases are important centers for newest Army and Navy fighting craft.

One reason why current models of Army and Navy fighters and bombers are outclassing those of the enemy, type for type and ship for ship, is that their combat-weathervane has been proved by exhaustive tests under conditions as nearly as possible those of combat. For the Army Air Forces this is carried out at the Proving Ground, Eglin Field, Florida, and the Navy conducts similar tests at its exclusive new setup at Patuxent, Maryland.

First Tests at Wright Field.—The flight testing of a new fighter, for example, the theoretical XF-90, follows this general pattern. When the first airplane has been completed, company test pilots put it through its paces, as far removed from U.S. Route 30 or 48 as possible, as people in cars will look up when they see an airplane flying around. Army Air Force pilots are in at this stage, carefully watching all developments. When the company is satisfied, the new fighter is turned over for preliminary Army tests at the field. During these stages careful minor improvements may be effected. Then it goes to Wright Field, where the Flight Section really gives it the works. Armed with the latest types of testing and recording instruments and gauges, experts measure the performance and determine the capabilities of the new fighter. Top speed, ceiling, critical altitude, rate of climb and other performance characteristics are carefully measured and recorded. Then follows the accelerated service test during which the new ship is subjected to some 120 hours of flying to try to develop maintenance weaknesses and determine whether or not it will stand up to the grueling conditions of front-line air warfare. All this can be summed up in the phrase "Technical Testing."

Combat Testing at Eglin.—So far so good. But what about the commander of the 99th Fighter Group wants to know is this: Does this new fighter

meet real combat conditions with maximum effectiveness? He doesn't care if an expert Wright Field test pilot can squeeze 439 miles per hour out of it at 24,646 feet. What will it do with full military load, under combat conditions, in the hands of a run-of-the-mill fighter pilot fresh from operational training?

How does the ship fit into the latest tactics which have been found most effective against the ME-109 G or the improved Jap fighters, Zivko or Zero? This is where the Proving Ground at Eglin Field comes into the picture, or at least this is one of the many activities carried on at this important center, which is located in an area including the entire Choctawhatchee National Forest

of 600 square miles, with 10 separate flying fields and 57 aircraft land and water firing ranges. (Testing of guns, engines, power-turbines, paratrooper bombs, etc., is an important part of the activity at Eglin.) All this can be classed as Technical Testing, and its effectiveness has been vastly increased by the use of many of our ablest air officers brought back from the combat theaters, both Army and Navy.

Comparative Tests.—With this setup it has become possible to run comparative tests on brand new models, as well as improved versions of existing aircraft, for both the AAF and Navy. For example, the Allison-powered Mustang P-51A is tested in all-around performance and at all altitudes against the Airacobra, Warhawk and Martin-powered Mustang (P-51B). The latter in turn may be tested against the improved Lightning, the Thunderbolt, and the Navy fighters, Corsair and Hellcat, with results both interesting and illuminating. A similar testing ground at Eglin has already proved of the highest value in the air war to date, various versions of the Spitfire, Hurricane, Typhoon, etc., being tested against each other, against American equipment and also against such captured enemy aircraft as may have been retained to flyable condition. A beginning on that has been made in this country

As potent a force in peace as it is in war.....

The speed and efficiency of military air transport to all points on the globe is an established fact. And it has set the pattern of post-war travel.

The aircraft in service on these runs, the pilots and ground crews who are doing this pioneering deserve credit for the successful functioning of today's worldwide air transportation. But there's one other item of equipment that has contributed tremendously to these successes... the electronic vacuum tube.

Electronic vacuum tubes are the very heart of radio beacons, communications, instrument landing and other now secret aeronautical electronic devices. These are the things which have made air travel safe and efficient... helped man conquer the air.

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tically unanimous acceptance and continued use by the major airlines throughout the world is a proof of this fact. Years of practical experience in the field, years of successful performance in aviation have made Eimac tubes first choice of the leading engineers throughout the world.

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U. S. WAR MISSION VISITS MACARTHUR:

Gen. Douglas MacArthur is shown (left) in this Signal Corps photo with members of a U. S. war mission which recently visited the Southeast Pacific area, including New Guinea. Next to the general is Judge Robert P. Patterson, Under-Secretary of War, who led the group, and others are Lieut. Gen. William S. Keadler, Director of War Production; John Ambler, Patterson adviser; Maj. Gen. Leroy Latta, Col. C. D. Silverthorne, Brig. Gen. S. C. Wright, Maj. Andrew Goodrich, and Col. Stanley Grogan of the Bureau of Public Relations in Washington.



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in the case of the Navy tests at the restored Zero fighter, Mitsubishi type -00 (Zeké).

Other Testing and Research Centers—Certain office projects are developed and tested at the Army Air base at March Dry Lake, California. A special proving ground (Clatsop County Air Base) for gliders and related equipment is at Wilkeson, Ohio. High powered engines for both Army and Navy planes are developed and tested at the NACA Engine Laboratory near Cleveland, and much research for both services is going forward at the NACA centers at Langley Field, Virginia, and Moffett Field, California.

Navy Air Installations—Navy's "Wright Field" is located on the Potomac River, Maryland, and a far-reaching program has been under development there since its establishment about a year ago. A much older installation is the Naval Aircraft Factory, Philadelphia, which engine testing for the Navy is carried on here, and the Navy has a place in the enlarged procurement program of the Bureau of Aeronautics. Lighter-than-air development and research continues at Goddard, Langhams, N. J., and at other places. To round out the picture, mention should also be made of the extensive research and development activities at most of the large airplane, engine, propeller and instrument companies. The total results of all this

effort may be read in the headlines almost any day.

GM's 1,000th TBM Turned Over to Navy

First "Avenge" produced at Trenton plant Nov. 11, 1942, under contract.

The 1,000th Avenge torpedo bomber (TBM) produced by Eastern Aircraft division of General Motors in the converted automotive plant at Trenton, N. J., has been turned over to Rear Admiral Frank D. Wagner, assistant to the deputy chief of naval operations, air, at brief ceremonies attended by nearly 10,000 workers.

General Motors flew its first Avenge from Trenton on Nov. 11, 1942, not quite eight months after the then newly formed Eastern Aircraft division had signed a Navy contract for the production of these powerful Grumman carrier-based airplanes, which were used for the first time in combat during the Battle of Midway.

Plant Converted—The plant was converted from the manufacture of automotive hardware and, since the original plans called out, more than 1,000 of these torpedo bombers have been produced despite design

changes and increased production schedules which have added 130 percent to original overhead.

Eastern Aircraft division also has produced well over 1,000 Grumman Wildcat fighter planes at its Linden, N. J., plant which was converted from automobile assembly. There are other divisions located at Turbottown, Baltimore, and Bloomfield, N. J., which fabricate parts.

Directing the operation is L. C. Good, vice-president of General Motors and general manager of the Eastern Aircraft division, with headquarters at Linden.

Asia Air Units Merge

U. S. and British forces coordinated in southwest area under Sir Richard Peirse.

A single Allied Air Force, under the command of Air Chief Marshal Sir Richard Peirse, has been formed in the Southwest Asia theater as the result of a merger of American and British forces in that area.

Strengthening—Gen. Forst, a directive issued by Admiral Lord Louis Mountbatten, named Marshal Peirse as Air Commander in Chief for the Southwest Asia Command and Maj. Gen. George E. Stratemeyer as second in command to Marshal Peirse and as commander of the newly created Eastern Air Command, which incorporates all combat units of the United States Tenth Air Force and the RAF Bengal Command.

Eastern Air Command will be organized as a tactical air force under operational control of Air Marshal Sir John Dillwyn, and a strategic air force under operational control of Sir Gen. Sir Basil C. Davidson, who has been commander of the Tenth Air Force.

Fairchild Output Up

Shipments of Fairchild Aviation Corp. for 1943 should be approximately two and one-half times the previous year's volume, according to James B. Gribbs, president, who told stockholders that shipments for the first nine months of this year were almost double those for 1942.

He said that, barring unforeseen circumstances, plants should operate at capacity for the greater part of 1944, since the backlog of orders remains high. Gribbs said Fairchild Aviation should be among the last to feel the full effects of any large change in the military program.



10,000 BT-15's PRODUCED:

The second Corsair (Vulture) base trainer off the assembly line and oldest BT-15 still in service, is serviced before returning to the Vulture Field factory to take part in a ceremony commemorating completion of its 10,000th descendant. Top rank Army and Navy officers were on hand as were Congressional Vulture officials, including Tom M. Girdler, chairman of the board, and Harry Woodfield, Corsair president.

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South America's First Engine Plant to Open Early in 1944

Brazil's National Motor Factory to go into production on Wright Whirlwinds at factory near Rio de Janeiro.

First plant in Latin America to build airplane engines from start to finish will get into production, probably early in 1944, on 450-hp Wright Whirlwinds.

This plant, the National Motor Factory (Fabrica Nacional de Motores) is near Rio de Janeiro, Brazil, on a site which in the summer of 1942 was a honey swamp.

Blocked Out—Fully air-conditioned, fluorescent-lighted, windowless and blocked out for security reasons, the \$8,000,000 factory has 80 percent of its equipment American-made.

Driving power behind the National Motor Factory is 43-year-old Air Brigadier Antonio Góes Mendes, of the Brazilian Air Force One of Brazil's leading aviators, he designed and built his country's first plane in 1908—the Minas 34.7 hp plane, which is still in active club use today.

New Techniques—General Minz

foresees vast technological changes for Brazil arising from the operation of the plant and says that "this factory will show Brazilians new techniques in making mechanical parts and in erecting factories of American—not European—design."

"For the first time we will be using the finest American precision tools on a large scale," he says. "Heretofore, Brazilian manufacturers have been inclined to buy British and German machine tools, since they were slightly cheaper than the Americans. That was, however, is showing each day that American tools not only have unsurpassed quantity output, but also unsurpassed quality. Once Brazilians see for themselves how these instruments work, they will be content with no other."

Nationalized Transportation—There long has been talk in Brazil of a national aircraft industry for both planes and engines, since Bra-

zil's transportation future, owing to the country's vastness and its varied terrain, seems bound more to airplanes than to railroads.

Small factories for production of light aircraft have been built, but talk of an engine plant did not crystallize until 1940, when General Minz was sent out on a two-month survey trip to pick the suitable factory site.

Get U. S. Credits In 1941—Gen. Minz came to the United States in January, 1941, to consult with officials of the American government and Wright Aeronautical Corp. The project was approved, the Export-Import Bank made available certain credits, and promises on machinery were granted. The promises did not hold up in face of the increasingly critical world situation and this was particularly true after Pearl Harbor.

When war came to the Americas, the military importance of the factory project increased, since engines were needed for Brazilian patrol planes and for Brazilian training ships. In February, 1942, General Minz returned to Washington for further discussions. It finally was agreed that the National Motor Factory would be included in assistance sent to Brazil. After American experts changed the plant design somewhat, a contract was signed with Wright Aeronautical Corp., authorizing manufacture in Brazil of Wright Whirlwind 450-hp airplane engines.

Engine Production—Gen. Minz says the plant will have a top production of more than 500 Wright



Brazilian Aviation Development: Two scores at the National Motor Factory (Fabrica Nacional de Motores) just outside Rio de Janeiro, which will be the first plant in Latin America to build complete aircraft engines. Interior view of the sophisticated machine shops.



reveals modern construction and fluorescent lighting, a feature throughout the plant which, when completed, will cost \$8,000,000. Exterior shows construction of the hangar at the plant airport. The runway will be two miles long.

Whirlwinds a year on one eight-hour shift, more than 1,000 on two shifts. Later, he plans to build engines up to 2,500 hp.

Postwar Plans—Brazil is looking to the postwar world, too, and as

recently reported in AVIATION NEWS, the Rio government signed a contract with the Fairchild Engine and Airplane Corp. to build the six-cylinder Ranger in-line air-cooled engine at National Motor Factory.

Aircraft Plants Now Adequate For U. S. War Needs, Nelson Says

WPA chief reports 1943 construction of plane factories is 35 percent under last year.

With few exceptions, the United States now has the capital equipment needed for completion of the war production program, WPA

Chairman Donald M. Nelson says that maximum effort today must be directed to full utilization of existing capacity.

War Production Board reports aviation plant construction was 28 percent less in 1943 than in 1942, and other military construction was down 37 percent. Military construction as a whole (troop housing, airfield, base, storage facilities, war highways and flight strips, etc.) in 1943 amounted to \$2,845,000,000, or 45 percent less than 1942.

Expansion Tapers Off—Expansion of government-financed industrial facilities (construction volume and machinery and equipment deliveries combined) totals \$4,800,000,000 in 1943, or 28 percent under 1942. Of this total, \$2,100,000,000 was for

machinery and equipment, the bulk of which was delivered to plants built by the Defense Plant Corp.

Expansion activity at aircraft plants in 1943 is 15 percent less than in 1942. New aircraft facilities approved in October totaled \$35,758,000, against \$56,440,000 for the comparable period in September.

Machinery and Equipment—Analysis of the preliminary distribution of cost of new government-financed aircraft expenditures during the past several months shows the major portion—64 percent—of the proposed new expenditures in this group are for machinery and equipment items.

Nelson's statement that the effort is directed to full utilization of existing capacity was made in connection with the signing of an executive order by President Roosevelt, transferring the existing authority for tax amortization privileges from

the Secretaries of War and Navy to the chairman of the WPA.

Tax Amortization—Facilities Bureau of WPA, under supervision of Vice-Chairman Donald D. Davis, will handle the analysis of applications for tax amortization privileges. Ray W. Johnson, director of the Facilities Bureau, has appointed Curran G. Brough as deputy director of the Facilities Bureau for Tax Amortization, with authority to approve necessary certificates for WPA.

The announcement that Davis has been given charge of all WPA field operations, in addition to his other duties, was made at the same time that Charles E. Wilson, WPA executive vice-chairman, announced appointment of Lemuel H. Bealware as operations vice-chairman.

WPA Shuffle—Bealware succeeds Richard B. Batschelet, who resigned Nov. 25. At that time, Wilson took over Batschelet's duties and it was indicated no successor would be named for Batschelet. Bealware assumes direction of all industry operations and divisions except the steel, copper, aluminum and magnesium divisions and the materials bureau. These metals and minerals groups will subsequently be organized under a separate vice-chairman.

When Wilson took over Batschelet's duties several weeks ago, some observers saw in the action a move to give him more control and closer contact with industry operations, with a view toward the reconversion program, which at the moment seems to be moving more and closer toward WPA and its industry constituents.



New Brazilian Aircraft Engine Plant: General view of National Motor Factory (Fabrica Nacional de Motores), in the foothills of the Serra do Mar mountains near Rio de Janeiro, which will go into production of

Wright Whirlwind 450-hp aircraft engines in 1944, first plant in Latin America to build airplane engines from start to finish. Eighty percent of the equipment, all latest American type, is new in place.

Army Simplifies Form On Contractors' Bids

Revised model expected to speed submission in case of procurement of aircraft contracts

War Department has developed and placed in use a simplified contractor's bid form to be used in purchase of goods and services under fixed price supply contracts which they believe will, in the event of termination, provide the necessary facts on which to frame a prompt settlement by the government.

Object of the new form is to provide uniformity for assistance in doing business with various branches of the Army Service Forces, and to assemble all pertinent facts to be considered both by contractors and by contracting officers in arriving at their prices.

Form No. 1—The new document, designated officially as Standard Procurement Form No. 1, is in three parts. The first, a form letter requesting quotations, contractors to fill out, sends a form on which contractors offer to produce goods or provide services, and third, a list of instructions for completing the actual form, which calls for data on a contractor's financial status and for additional information on costs and prices.

The new form, significantly, was prepared with the cooperation and approval of the Bureau of the Budget, which has not been too friendly to organizations set up by the service for dealing with contract termination or renegotiation. The ques-



Gen. Baker and Boeing Designer Lt. Gen. J. C. Baker, commanding general of the Eighth Air Force, and William C. Bell, vice-president in charge of engineering, Boeing Aircraft, look over a "cockle" map at the Eighth's headquarters. Bell, recently returned from a first-hand inspection of Flying Fortress operations abroad, is among those responsible for the design of Boeing's Sea Ranger, and for the B-27 and B-29.

tionnaire section is elaborate enough to provide all information needed under varying circumstances.

Paper Work Cut—The War Dept. emphasizes, however, that in each instance, contracting efforts will request only such data as are needed, so that manufacturers' paper work will be held to a minimum.

It is expected that in few, if any, cases, will the entire questionnaire need to be answered by providing for all contingencies on a single form, as the War Department believes they have in this case, uniformly of information will be achieved.

British Plane Plants Will Make Houses

Plan mass production of 4,000,000 prefabricated homes after war.

A unique approach to solving aircraft manufacturers in their conversion to peacetime production is now being worked out in Britain by 150 large firms, representing five major British industries—aircraft, plywood, steel-tubing, light alloys, and iron and steel.

Program calls for postwar mass production of prefabricated houses, which will provide 4,000,000 homes in Britain. The plan will draw heavily on war-learned lessons in con-

struction and design of postwar aircraft.

Boeing "Sea Ranger" Program Studied

Production of twin-engine flying boat by Martin is considered.

Navy is considering production of the Boeing Sea Ranger XPBB-1, a long-range twin-engine patrol bomber first flown July 1, 1940, tested by the Navy at Norfolk Point, Jan. 12, 1941, and later accepted.

The XPBB-1 was selected for production in the Boeing plant at Renton, but urgent need for heavy Army bombers resulted in the Renton plant being turned over to the B-29 program. Because only one XPBB-1 was built, it was nicknamed the Lone Ranger.

Martin Considered—The Navy is now trying to determine which factory facilities shall be turned over to PRB production and it is said to be meeting some resistance on the part of airplane manufacturers who naturally would rather make their own designs. Since Glenn L. Martin is one of the foremost exponents of flying boats, it followed that his company received prime consideration.

Whether Martin will eventually build that flying boat is still under consideration and Navy and Martin officials are reluctant to discuss the

point. There were strong indications, however, that Admiral John S. McCain, chief of the Bureau of Aeronautics, was going to be firm on the point when a decision finally is made.

Fast Tanks in Wings—The Ranger is a big ship, in the four-engine class, but powered with two of the big, new Wright X3300, rated at 2200 hp, but capable at considerably more output.

The wings are not conventional spar and truss work, but are formed of channelled and angled steel metal. Continues in this short special week from the 6 fact tanks. This arrangement is one of the main reasons for the ship's extremely long range. The Ranger's load capacity is far beyond the usual figure for a plane of its size.

Pacific Operations—Although the submarine menace has been put under control in both oceans, operations in the Pacific will require long-range patrol and attack equipment until the Japs are liquidated.

Of course the Boeing Co. itself would like to build the Ranger, if it is to be built, because it may turn out to be the basis of an economical postwar transport. But the urgent need for B-17s and B-29s takes priority.

Designers—The main chief responsible for the Ranger design are William C. Bell, Ed Wells, George Schauer and Don Rader. They arranged for the flight crew to operate together on the upper deck. They provided a new type of landing gear which features to the hull like a key in a lockhole.

These features do double duty, holding also the wing-supported platform for engine service.

New Plastic Process Used by Fairchild

Fairchild Regime and Airplane Corp's program for developing processes to permit utilization of a wider range of materials in aircraft design has been aided by Durr's engineers in application of electrocoat to improve quality and speed production of plastic-bonded molded-wood airplanes.

These engineers report this application of a new science to a well-known material, called electrocoat processing, provides a satisfactory answer to a hitherto unsolved problem—that of getting a uniform heat in all glue lines in a plastic laminated surface.

Variety of Products—Fairchild, unlike some companies, designs and works in a wide variety of materials—steel tube, sheet aluminum alloy, wood, and plastic laminates. It has pioneered in using many new processes and materials.

In general, its policy has been to work in, and attempt to improve, the techniques for efficiently using all materials, from those of highest density, like steel, through aluminum to those of a lower density, like wood, and even to synthetic cellular materials one-tenth the density of wood.

Wood Techniques—Acknowledged the fact that wood, as an aircraft material, recently has been subjected to criticism, Fairchild engineers centered that an examination of the facts on which most of this criticism is based shows that it is not the wood which is in effect being criticized, but the materials and meth-

ods of fastening or bonding the pieces of wood together, and the finishes for protecting the wood.

These engineers point out that this is the same general sort of criticism directed at aluminum alloys before modern techniques of using heat-treated alloys was developed as an efficient fastening means, and before Alclad anodizing was developed as a protective coating.

Electronic Process—It is a simple but sometimes overlooked fact that no material is more durable in an assembled structure than the joint which fastens the pieces together.

There are two methods of applying heat in a glue line. The first is to apply a heated piston to the surface of the wood, depending upon conditions to bring heat to the innermost glue line. The second, the electronic process, is to cause a current to flow through the wood and by electrical agitation cause the wood to heat uniformly throughout.

CAA Wins Award

Civil Aeronautics Administration, for its Civilian Pilot Training Service and the later War Training Service, won the first award of the newly established Frank G. Bremer Trophy for outstanding contribution to the air education of youth.

The award was founded and endowed by Frank G. Bremer, Birmingham, Ala., businessman, in honor of his two sons, both served overseas. It is administered by National Aeronautic Association. Vice-President Wallace presented it to William A. M. Barden, special aviation assistant to the Secretary of Commerce.



LABOR UTILIZATION:

Despite expansion and other difficulties, the aircraft industry has worked a steadily rising production curve. Chart shows the percentage production two years ago and 1941.



Boeing's "Ranger" Production Forecast: This is Boeing's new almost legendary Lone Ranger, the XPBB-1 Sea Ranger, the only one ever built, construction on which was halted in favor of big bombers. The Navy is

now seriously considering production of this big, long-range, four-engine patrol bomber. It was first flown July 5, 1940, tested in January, 1942, and later accepted.

PERSONNEL

D. Allen Dickey, civilian chief and technical adviser of the AAF Western Component Laboratory at Wright Field, has been awarded the Emblem for Exceptional Civilian Service. Dickey has been employed at



D. Allen Dickey

Wright and McCook Fields for 24 years. After his graduation from Ohio State University in 1918 with a B.S. degree in electrical engineering, Dickey went to work for Westinghouse in the high tension laboratory at Pittsburgh. He was assigned by the Army in 1927 to develop a special type propeller, and later, as a result of the development of the Liberty engine, he designed the first whirling arm which propellers could be tested on to high horsepower. When Dickey went to McCook Field in 1935, he built new whirling rigs for more powerful propellers, and supervised the design and construction of control equipment at the wind tunnel at Wright Field. With the advent of World War II, Dickey was selected to plan a new propeller laboratory building at Wright Field and to design an acoustically treated chamber.

E. H. Pickering, formerly a special consultant on air corps for the Army Air

Forces, will conduct a newly accredited course in Air Transportation which will be introduced in the spring term at Delta College of Southern Methodist University, Pickering has been associated with aviation since 1920, being a former vice-president of Texas Air Transport, Inc., and formerly with American Airlines, Pennsylvania Central Airlines, North American Airlines, and Southern Aircraft Corp.



Harry E. Moore, principal industrial economist of the Peace Analysis division of the Bureau of Labor Statistics, has joined Bristol Airways as director of research. Moore was once an instructor in commercial engineering at Carnegie Institute of Technology, and a professor of economics in the College of Commerce at the University of Kentucky.

Philip G. Johnson, president of Boeing Aircraft Co., was selected by the Seattle Real Estate Board as "Seattle's First Citizen for 1945." A bronze plaque will be presented to him on Jan. 25.

Former vice-chancellor of the Civil Aeronautics Board, Lt. Col. George E. Baker, has received a temporary promotion to full colonel, the War Dept. announced.

The first of an entire crew of combat air cadets to receive Air Medal awards are five American Airlines (TWA) cadets, for their participation in a flight from Princeton, N.J., March 10 to Newfoundland and thence to North Africa on an initial survey mission. "Exceptional navigational facilities and lack of flying aids, the voyage was flown in less than 11 hours," the citation states. Medals were awarded to M. G. French, flight engineer, John F. Davidson, Captain (in capacity of pilot), J. E. Bowen, navigator and second officer, James E. Ho, first officer and co-pilot, and C. W. Hawk, radio officer. Only three other cadets have received Air Medals.

W. A. Mulcahy (right), with the Columbus, O., warplane plant of Curtiss-Wright Corp. for the past eight months, has been named public and industrial relations manager of the plant. He was formerly executive secretary of the Executive Chamber of Commerce for seven years. He succeeds E. W. Dwyer (left), who has served in this capacity for the past two years, and who is transferred to the Buffalo plant as assistant director



of public and industrial relations for Curtiss-Wright's entire airplane division.

Palmer Nichols has been elected vice-president and appointed general manager of the newly created Pacific Division of Bendix Aviation Corp. The Pacific division succeeds the company's wholly owned subsidiary, Bendix Aviation, Ltd., at North Hollywood, of which Nichols has been



president and general manager. Nichols received his pilot's license in 1918. In 1928, he organized the Pacific Automotive Co. for the sale and service of aircraft parts, and remained as general manager when he sold the business to Bendix a few years later.

Edward L. Troutman, assistant manager of the Air Corps Division of Export Airlines, has been granted a leave of absence to join the Maryland Marine. Arthur Galt will act as assistant manager in his absence. Galt has been division corps manager and was formerly with the freight brokerage business.

Carl W. Kliss, formerly general sales manager of Taylorcraft Aviation Corp., has been appointed assistant to the president. He has been with Eastern Air Lines as a pilot for the past year. In his new post, Kliss will be concerned with general contract, sales and service, and will be a member of the company's general planning committee.



Frederic G. Weyburne (photo), with Bendix since 1934, has been named general manager of the Marshall-Bellevue division of Bendix Aviation Corp. A veteran of 17 years in the field of brake and brake lining manufacturing, sales and service, Weyburne has been sales manager of this



division since its existence. He succeeds Parker Marshall, who resigned to become president of the Plains Tire & Rubber Co.

Flaisher D. Dolga, personnel relations manager of Republic Aviation Corp., has been named assistant director of the industrial relations department. He is succeeded by L. C. Friedman, personnel relations supervisor of the victory ship. Dolga is an expert superintendent of the experimental, utility, assembly plant and pre-test department at Arthur Thompson.

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Means
FINE AIRCRAFT PARTS
made to YOUR order

...PARTS manufactured exactly to your specifications, and delivered promptly

Long manufacturers of complete products for the automotive industry, our Tel-air Division entered the war program as a complete, coordinated manufacturing unit of skilled tool designers, experienced tool and die makers and machine operators equipped with modern precision machine tools, and trained in working with the toughest steels and alloys.

As both prime and sub-contractors, manufacturing precision aircraft parts, Tel-air quickly established its ability to understand requirements, quote intelligently and produce in quantity promptly, and within strictly held tolerances aircraft parts which are now nationwide known as Tel-air Parts. Tel-air's record on the most rigid inspections is—99.95/100% acceptance.

We cannot reveal the uses of the component parts illustrated—only a few of the many we are producing constantly for our Army and Navy of the Air. All require the closest tolerances, concentricity and super-accurate drilling and finishing. All tooling and die making is done in our Tel-air plant.

Your men blueprints and specifications will have our immediate attention. Special designs and quotations as required.

Is the
Air It's
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The **TELEOPTIC** Company
Racine Wisconsin

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John S. Gansway, for the past three years with Adel.



and service engineers. Gansway previously was a topographic and aerial photography engineer for the U. S. Department of Agriculture.

R. A. Bessman has been promoted from chief of materials to executive assistant in charge of subdividing of the Kentucky division of Consolidated Vultee Aircraft Corp., Louisville. He is succeeded by H. E. Smith, assistant chief of materials.

New division engineer at Consolidated Vultee's Kentucky division, J. O. Walker, with the San Diego division for four and a half years. He was in engineering and factory supervision and handled special orders on B-24s. On a special assignment in Texas before a modification center had been established, he helped modify a number of Liberator's. The success of this work is said to have had much



KNUDSEN SEES C-46s:

LEO GEORGE KNUDSEN, director of production for the War Dept., is shown with G. J. Brandenburg, general manager of Curtiss-Wright's Louisville plant, where the general office is employed building the C-46s to troop transports.

to do with the Army's decision to establish modification centers in this country.

Zeno Wall has assumed his duties as plant safety engineer for Fairchild Engine & Airplane Corp. He was in the same capacity for mobile station WWC at Asheville, N. C., and the

Asheville Citizen-Times. He has also held safety posts with toxic materials.



Frank G. Sorenson, president of United Aircraft Products, Inc., has been elected to the Board of Directors of Pittsburgh Metallurgical Corp., second largest producer of aluminum and high carbon ferro-chrome alloys in the country. Sorenson was vice president of United Aircraft since 1941. He also is president of Aluminum Products, Inc. and was for many years an executive of the Cincinnati Gas Co.



J. E. Dethlefsen, Jr., has been appointed advertising manager handling public relations for Republic Aviation Corp. He will continue also as supervisor of motion picture development before joining Republic in an executive capacity in August, 1943. Dethlefsen was with Servel, Inc., in an advertising and sales promotion capacity.



F. Young has been appointed acting superintendent of maintenance of the western division of Canadian Pacific Air Lines, with headquarters at Edmonton. He was previously assistant manager of the CPA aircraft repair plant at Moose Jaw.

John Farley has been appointed general manager of the Ann-Bell Ltd., with headquarters at Toronto. For the past 15 years he has been head of the company's Montreal office.

Walter W. Bender has been appointed assistant operations manager of Trans-Canada Air Lines at Winnipeg, coming to the post from that of operations superintendent at Montreal. He is succeeded at Montreal by Frank L. Young, till now chief pilot at Toronto.

G. A. C. Bar has been appointed production manager of DeHavilland Aircraft of Canada, Ltd., Toronto, succeeding H. Perry, who has been ap-

pointed to the new post of chief production engineer. Perry came to Canada from the parent company to take charge of Monotype production.



years. His headquarters will be in the Airline Terminal Building, New York.

James Simpson, assistant to the production manager of Fairchild aircraft division, has been appointed assistant to the financial manager of Republic Aviation Corp. He has been assigned the task of correlating the duties of the day and night shifts and also the work of production and the office service departments. Concurrently, Charles S. Wilson has been named acting general manager, Fairchild Aircraft, Inc., Buffalo, company general attorney, is available only on a part-time basis because of illness.

Paul W. Pate has joined Delta Air Lines as traffic analyst. For the past 20 months in the army, Pate formerly had eight years' experience in the same position for transportation field. He will work under Delta's director of planning and research, H. Menes Johnson.

Morale Aid

Navy is starting a new company morale program at Goodyear Aircraft Corp., which may become a pattern for other aircraft companies in aid of boosting production.

A "good ship" campaign was launched recently when 13 officers of the Manufacturing Division of the Bureau of Aeronautics moved into Goodyear's assembly plant for a one-day series of 25 meetings with the object of putting Greater Fighter plane production workers racing against time to get a particular plane, and all others ahead of it on the assembly line, delivered to the Navy by the end of the month.

Headed by Captain L. E. Marshall, the officers spoke at twelve stations in the plant on all three shifts, telling of the accomplishments of the Century in the Pacific war theater and looking Goodyear production.

FINANCIAL

Rail Unions May Influence Trends in Air Transportation

Stand taken by railroad brotherhoods against their employers' participation in aviation is seen as more than a question of new members.

By ROGER WILCO

Considerable speculation surrounds the why and wherefore of two powerful railroad brotherhoods in recently asserting off as a national economic aviation policy. As previously reported (AVIATION NEWS, Dec. 13), the Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Engineers advocated a policy prohibiting railroad investment in airlines from entering the air field. Further, a "single strong American flag line" in international services was favored. Other recommendations were also advanced but have previously been published and need not be detailed here.

The stand taken by these two potent unions drew an indignant response from Railway Age, which vigorously refuted rail management opinion. The best the journal could suggest was that the brotherhoods had little hope of adding to their membership numbers by drawing upon aviation personnel.

Significance Studied.—The true significance, however, probably is of far greater import than the question of acquiring new members. For a proper perspective, it may be helpful to explore the position of railroad labor among the steam carriers and in the nation's economy as a whole.

Railroad labor is strongly organized among various credit lines. The two most powerful brotherhoods are those already indicated and which account for a membership of about 250,000. To these two must be added the 19 separate union groups which find a common spokesman in the Railway Labor Executive Association. In this category are many unions which have but a partial interest in railroad labor. For example, the International Association of Machinists and the Sheet Metal Workers Association, International, while having many railroad members, have their dominant interest along

a diversified industrial front. This merely serves to illustrate the strong interlocking labor line peculiar to these rail unions.

Big Payroll.—All told, about 1,400,000 persons are currently employed by the railroads, and account for an annual payroll now running in excess of \$3,000,000,000. This may be compared with entire personnel of about 75,000, the payroll volume in dollars is unknown, but is certainly dwarfed by the railroad figures.

These comparative totals clearly show just where political pressure may be expected to have its strongest support. Furthermore, the railroad brotherhoods have given ample demonstration of their ability to accomplish results which are undeniably evidenced only by an Act of Congress. The railroad industry with financial and well-merited support failed to make any progress in this direction. And then the Brotherhoods, merely by a desire to help "Uncle Sam" Wilford, late president of the B & O, who was well liked by rail labor, get behind the measure and it became law and saved the railroad from bankruptcy.

Other Examples.—A few more instances are cited at head. Above the present piece of the Administration, the Senate has already passed a resolution calling for an eight-hour day pay increase for the non-operating railroad employees. That move shows a pressure group in operation New comes a strike call for Dec. 28 by the five railroad operating brotherhoods in demand for higher wages for their contract. That is a general act by the brotherhoods when seeking higher pay. These strikes have never materialized in recent times but are



UNITED VETERAN HONORED:

First 25-year pin ever awarded by United Aircraft Corp., went to George Prentiss (left), chief inspector at Chance Vought Aircraft, Stratford, Conn. Here Prentiss receives the pin from United's president, H. Menefield Borer.

usually always effective in attaining the objective of higher wages.

Chas. Kneib—It can be seen that the rail unions are sufficiently well-organized for their self-interest. It is a side warning that anything that may seriously threaten the survival of the railroads and their ability to provide service will be faced in conflict with the power of the railroad brotherhoods. This is a powerful force to be reckoned with when the legislative history of air transportation is finally written.

With this broad perspective, it is possible to construct some basis for the seemingly unrelated interest of railroad labor in another transportation medium.

Air Unions—As a matter of fact, intelligence, the air carriers have a number of labor unions of their own. Best known is the Airline Pilots Association, International, which has the largest membership in the industry now. The Air Line Dispatchers Association, The Airman's Association of America, Flight Radio Officers Association, Air Line Communications Employer Association and Air Line Mechanics Association, International.

(A second article, to appear in an early issue, will discuss in specific terms the position of the railroads in controlling for the nation's postwar transportation market.)

Financial Reports

Rike Aircraft Corp. reports net profit of \$1,176,046 after federal income and income profits taxes for fiscal year ended July 31, but adjusted to reflect amortization of war contracts, equal to \$3.31 a share on 325,990 shares, compared with \$1.389,181 or \$3.92 a share in the preceding fiscal year. Current assets July 31 were \$18,026,000, and current liabilities \$15,595,673, compared with \$3,323,517 and \$3,265,218 respectively a year earlier.

Republic Refers 50,000 Preferred

Stock in last of 200,000 shares held by Paul Moore.

Directors of Republic Aviation Corp. have voted to retire the remaining 50,000 shares of second preferred stock, all held by Paul Moore, director, as of Dec. 23, at \$15 a share. Moore took the entire sum of \$750,000 preferred in exchange for notes payable, which he held. The stock was redeemable at \$15 a share at any time, in whole or in part; on

20 days' notice, and carried one vote per share.

Allred Marples, Republic's president, and the \$150,000 was reached by agreement. The first \$50,000 shares were called July 1, and 100,000 shares on Oct. 30. Moore reported as Dec. 3 that he also held 171,257 shares of the company's common stock.

Thompson Products Sees Parts Future

Company expects 250,000 planes to be flying by 1950.

A letter to stockholders of Thompson Products, Inc., accompanying dividend checks says replacement parts sales for 1943 will be the highest in the company's history and that the company expects to continue a large airplane replacement parts business after the war, forecasting that by 1950 there will be over 250,000 privately-owned airplanes in the United States.

1941 Good Year—Thompson's best previous year was 1941, when replacement sales amounted to \$12,344,488 or 25 percent of total business for that year, which was \$49,322,090. Replacement sales in 1942 amounted to \$10,737,993, the production being due to material restrictions.

Company's postwar planning program in the service division, which handles the replacement business, is looking toward addition of new lines of large volume parts and accessories as well as improved parts in present lines.

United Reports Officials' Income

SEC data indicate officers and directors received \$176,776 in 1942.

Directors and officers of United Air Lines received \$176,776 in 1942, the company reports to Securities and Exchange Commission in connection with prepaid insurance and sale of 100,000 shares of 4½ percent cumulative preferred stock, \$100 par value.

Not included is \$24,429 for legal services paid to Mayer, Meyer, Auerbach & Platt, of which Paul M. Godekin, United director, is a partner, and \$28,000 for services in investigating possible acquisitions by the corporation of operating airlines or their securities, paid to Sherburne Ripley & Co., Inc.

Officials' Data—President W. A.

Putterman was paid \$35,411, including \$12,111 in payments made for insurance and retirement plan. J. A. Murphy, vice-president in charge of operations, was paid \$35,410, including \$220 payments for insurance and retirement plan. Harold C. Tracy, vice-president in charge of traffic, received \$24,161, including \$11,111 credited for a retirement annuity based on 11 years credited service prior to Jan. 1, 1941, and \$1,284 representing other payments.

R. E. Fleming, vice-president in charge of customer operations, was paid \$22,453.24, including \$10,662.60 in payment for a retirement annuity based on 14 years credited service prior to Jan. 1, 1941.

BRIEFING

Boeing Aircraft of Canada has started working at its No. 2 plant at Vanouver, to start work on production of the Anson V twin-engine bomber-twiner. The company also announced it will be subcontracting with firms in Canada and the United States as work for the production of Canadair twin-engine bombers. Some 280 subcontractors have been placed thus far.

The largest elementary flying training school under the British Commonwealth air transport plan is now in operation at Abbotsford, near Vancouver, and is to be opened officially at an early date by Canadian Air Marshal C. G. Power. There are now 154 schools in operation under the plan, with the number steadily projected shortly after the war started.

A word of changing guns, a strip of adhesive tape, and a gauge badge helped bring a Martin B-26 Marauder plane for a wide landing at its North African base. The plane received a damaging fuel air fire early. Hydraulic fluid was leaking from a partially severed line in the radio compartment. Two staff sergeants opened a first aid kit, chewed a couple of sticks of gum, padded the fuel hose, applied the adhesive tape and then wrapped the "injury" with a towel. The operation was successful.

The number of civilian employees in the Army Air Force Service Command, one of the largest employers of civilians, will have been reduced to total number from 13,000 to 12,000 by the first of the year. War Department said it was in accord with the manpower board policy and that no wholesale layoffs have been necessary to make the adjustment.

M. F. Clayborne, president of Chrysler Manufacturing Co. (General Motors Rebuilding Specialists), has authorized a new portable engine stand for assembly and overhaul of aircraft engines. The stand is made of a complete new stand but is designed.

TRANSPORT

Airline Review for 1943 Indicates Commercial Gross of 120 Million

Air Transport Association says revenue passenger miles this year are up 10 percent, express ton miles 34 percent, and mail ton miles 75 percent.

By MERLIN MICKEL

Latest figures from the Air Transport Association estimate that total gross income of the domestic airlines will exceed \$120,000,000 in 1943, not including their military contract operations.

This total, nearly all of it operating revenue, compares with \$118,663,282 in 1942, \$97,000,000 in 1941, \$75,948,000 in 1940, and \$45,566,000 in 1939.

Little Known Facts—The estimate on 1943 income became available after the Association completed its edition of "Little Known Facts" about the air transport industry. A statement by Col. Edgar S. Gorrell, ATA president, announced that the booklet is available.

Increases in efficiency will enable the lines to close 1944 with gains of 10 percent in revenue passenger-miles, 34 percent in express ton-miles and 75 percent in mail ton-miles, despite the fact they still are operating with only about half their pre-war equipment.

"Estimates indicate," Gorrell's statement said, "that revenue passenger-miles flown by the domestic airlines during 1943 will exceed 1,040,000,000, as compared with 1,390,042,166 in 1942, and 1,306,564,331 in 1941. In 1940, the figure was 1,161,375,355, and in 1939, 671,672,881."

Figures on Express and Mail, Express Ton-Miles and Mail Ton-Miles		
1943	1,572,709	797,411,801
1942	1,390,042	1,161,375
1941	1,306,564	1,040,000
1940	1,161,375	797,411
1939	671,672	411,801

* Preliminary estimate, expected to be similar.

"The 5,732 passengers carried by the domestic airlines in 1943," Gorrell points out, "reached a peak in 1941 of 4,380,563 passengers. The number dropped to 3,551,813 in 1942 because the airlines turned over more than half their equipment for strictly military duties and in con-

sequence the necessity of eliminating certain routes and stops after evacuation and reconcentration by the Civil Aeronautics Board reduced the number of short-haul passengers and occurred an increase in the average length of haul. This year the number of passengers will exceed 5,155,000. The average passenger trip jumped from 324 miles in 1939 to 417 miles in 1942 and 463 miles in 1943, while the average passenger fare per mile dropped from 12 cents in 1939 to 3¢ in 1942."

By Safety Records—The stressed safety

records as "greater than at any time in the history of commercial aviation," and cited plane miles per fatal accident, this year expected to exceed 44,583,161, compared with 32,026,377 in 1942, 33,555,670 in 1941, 36,506,412 in 1940, and 41,353,712 in 1939.

The report said the airplane is averaging better than 1,830 miles daily, compared with 1,100 before the war. However, passenger load factor for 1943 will be about 91.40, against 72.15 in 1942, 58.15 in 1941, 57.95 in 1940, and 54.10 in 1939.

In a comparison of aircraft of course, "Little Known Facts" shows that, whereas in 1931 93.5 percent was from mail, 11.3 from passengers and 4.3 from express, by 1942, passengers accounted for 72 percent, mail for 22.6 percent, and express for 4.2 percent.

American Export Line Asks Bermuda Route

Other companies seek permits for air service in Florida, New England and Michigan.

Applications for air transportation in Florida, in New England, in Michigan and from New York to



SIKORSKY CARIBBEAN CARGO CARRIER

The interior of the 8-42, four-engine Clipper Pan American is being set on an all-cargo plane in the Caribbean, looks like this before it is loaded. Some 2,500 pounds of passenger furnishings and assault-proofing equipment were removed to make way for army loads of 4,000 pounds. The plane is operating without fixed schedule between Miami and San Juan and Miami and Barranquilla.

Hermans were filed with Civil Aeronautics Board last week.

American Export Airlines asked for a permanent certificate authorizing scheduled transportation of persons, property and mail between New York and Rosneath, Bermuda.

► **Florida**—From Florida came an application from Bush Motor Transit Co., which runs a bus service to various beaches from Jacksonville. Company asks to provide air service to these points and to airports adjacent to Jacksonville. It proposes to use helicopters to transport persons, mail, baggage and light express over eight routes from Jacksonville, the longest of which is 167 miles.

Trailways of New England, which operates a bus service over approximately 5,500 miles daily in New England and New York, applied to carry persons, mail, newspapers and express, over three routes via various intermediate points. Coordinated with their bus service, they propose to use "autobus aircraft, including helicopters." The routes applied for are from Haverhill, Mass., to New York, from Boston to Hartford, Conn., and from Concord, N. H., to Fitchburg, Mass. They asked also to run a charter air service over irregular routes from within 25 miles of any points named in their application and any place in the United States and Canada.

► **Michigan**—Two regular routes, stemming out of Traverse City, Mich., were requested by Northern Michigan Airlines, located in that city. Using two-passenger twin-engine aircraft, the routes would cover 328 and 145 miles, respectively, to points all in the state of Michigan.



CANADIAN CAR & FOUNDRY'S 1000th:

The Anson Mark V, two-engine biplane is the 1,000th airplane, built, assembled or overhauled within 1,000 days at the Anson plant of Canadian Car & Foundry Co. Ltd. The plane is largely wooden-built of plywood construction.

Arrangements to applications previously filed were requested by Pan American Airways, United Fruit Co., and Checker Taxi Co. Pan American amended its application to provide service between San Juan and New York with Baltimore as co-terminal, requesting that a terminal point at Charleston, S. C., with an intermediate stop at Nassau, Bahamas Islands, also be granted. The amendment specified that certain schedules on these routes would continue or connect with through schedules between continental U. S. and Rio de Janeiro and Buenos Aires.

► **Headlines**—United Fruit Co. amended its application to include Venezuela as an intermediate point on two routes previously applied for. Checker Taxi Co., which had requested non-scheduled taxi or

charter service of persons from downtown to any points in the country, amended its application to include property as well.

An application for an amendment, alteration or modification of its present certificate of convenience and necessity for Route 43, as to re-move the restriction governing service to Colorado cities, was filed by Bonair Airways. The general restriction allows Bonair to serve Denver, Colorado Springs and Pueblo only on flights originating or terminating at Fort Worth-Dallas, or points south thereof.

► **Competition**—Intended primarily to prevent competitive local flights between Colorado cities which might injure Continental, Bonair states that it has no desire to compete with Continental. The application says, however, that these cities are now denied through air service on flights originating at Oklahoma City, although they are all on the same route.

Bonair called attention to its applications as filed for a route between Oklahoma City and Atlanta via Shawnee, Tulsa, Muskogee, Fort Smith, Little Rock and Memphis, which will be heard early in February.

The line announced that it intends to operate through flights from Denver to Atlanta, via Oklahoma City, if this application is granted.

However, under the terms of the present restriction, this would not be possible. Consequently, it requests that the restriction either be removed or modified to provide that flights serving Colorado cities originate or terminate at Annette or points beyond.

PCA Opens 2d NATS Transitional School

The second transitional school for Naval Air Transport pilots opened for a commercial phase was started by Pennsylvania-Continental Airlines at Roanoke, Va., last week.

The transitional school, similar to that operated at Fort Worth, Tex., by American Airlines since a year ago last March, opened for naval aviators, some of whom have been primary instructors, and will graduate a class at 30-day intervals.

► **Personnel**—Staffed by PCA pilots and instructor personnel, it succeeds that operated by PCA for the navy before the Air Transport Command took over the aviation training program formerly operated under the Airlines War Training Institute.

Eight DC-3's, some of them converted from passenger service and others original cargo planes, will be used. PCA says none of the classes is a military secret.

UAL Chief Sees Spurt In Postwar Traffic

Passenger traffic 50 percent gain in five years of peace.

Looking his predictions in the five years following the end of the war, as the longest period in which an accurate forecast may be made, W. A. Patterson, United Air Lines president, is confident that at that time passenger air transportation will grow to five times its best prewar year of 1941.

He expects that United, which in its peak year had 4,284 employees, will have 15,000 to 20,000 by the end of that five-year period, and may be using 67 planes of 50 passengers each, compared with the 23 11-passenger planes it operated in 1941. Although he feels that a one-year forecast fails to reflect overall trends, and "beyond guessing," Patterson does venture one prophecy in the latter time range.

► **Statistics**—He observes that statistics trends, presumably calculated by United's extensive research department, indicate that within 20 years the domestic airlines may be carrying 50 percent of all passengers now traveling by first-class Pullman facilities, 40 percent of the express now moving by rail, a third of railway coach and inter-city bus travel, 99 percent of parcel post, and 20 percent of rail less-than-carload



PCA Training Navy Pilots: Present at the signing of the contract under which Pennsylvania-Continental is training pilots at Roanoke, Va., were (cont'd.) J. H. Carmichael, PCA vice-president, and Capt. F. T. Ward, director of the Aviation Training Division of the Chief of Naval Operations. Standing are Capt. James T. Baker, director of training for PCA, C. Robert Moore, PCA, president, and Lt. Preston R. Becker, who will have charge of training for the Navy.

freight. He qualifies this by explaining that certain tangibles and intangibles are not taken into consideration in these estimates, for example, wartime transportation gains in speed, comfort, and operating efficiency and economies.

National production and national income, he emphasizes, are factors in the future growth of air transportation. Public acceptance of air transportation, he says, has increased 28 times because of the war, but there still is a difference between public acceptance and public ability to make pocket-size use of air transportation. Passenger rates average 1 cent a mile, and hopes are they will come down to 4 cents a mile, "but even 4 cents does not reach the mass market."

► **Private Phases**—As he told a post-war planning group conference in Chicago recently, Patterson looks for a heavy volume of private phases after the war—part of it the result of an "emotional surge"—but he also sees a number of repercussions. Feeling that communities should not go the limit on huge airport

projects, United's president says runways of about 6,500 feet should suffice for a long time, and suggests that municipalities planning for airports keep in touch with the Civil Aeronautics Administration, which keeps informed on the need. A lot of airports for short distance hops may not be warranted, he believes, since the automobile may be needed as to provide competition for the plane for distances up to 90 miles. Aircraft plants built and owned by the government since the war began, Patterson thinks, will turn in many instances to products other than airplanes after the war. Some manufacturers he knows of already are turning their thoughts to prefabricated houses and complete kitchen units as likely postwar alternatives.

Canadian Car and Foundry Co. is erecting a new hangar near its Port Wilkins, Ont., plant to serve the factory where currently Curtiss Helicopters are under production and where Harrison and Greenough fighters had been made previously.

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The OWI Report

THE OWI REPORT on the airlines at war is the first official summary on the subject to be issued to the nation. It is a good report. Those in aviation will find little new in it. The public will find much it did not know. The generous space devoted to the report by the newspapers last week, including two stories in the same issue of the New York Times, is adequate proof of that.

It is regrettable, however, that some of OWI's material, which it gathered independently from the airlines, the Air Transport Association, and government agencies, was not left in the final version. OWI's writers are experienced in detecting material violating military security and nothing of a secret nature was incorporated in the first draft. The only other explanation is that the material deleted violated ATC policy. Some of the material originally removed by ATC was reinserted by OWI, however.

Nevertheless, the net result is still good. The very fact that the report was in production served to loosen the restrictions on release of ATC activities by the airlines. In the past month or two summaries of activities by individual lines have been approved for publication. TWA, PCA, American and Pan American all have been allowed to issue stories. TWA and Pan American were permitted to run full page newspaper advertisements on their trans-oceanic accomplishments. In the same period Consolidated Vultee Aircraft Corp. finally was able to clear an outline of the operations of its trans-Pacific service from by Conspiracy.

There has been a smothering of criticism of the OWI custom of preparing factual reports on subjects of public interest. A few columnists have felt that the newspapers or wire associations themselves should prepare such stories. The OWI report on the airlines, however, is a striking example of OWI's ability to tell a story which no newspaper or newspaperman has been able to pry loose since we entered the war.

Our War Training

THE TREMENDOUS ACHIEVEMENT of the Allies in aviation training was pointed up by the head of the RAF delegation in the United States the other day.

Despite the phenomenal growth in output of aircraft plants in Britain, Canada, and the United States, Air Marshal Sir William Welsh made it clear that schooling is more than keeping pace with production. He said:

"I often hear it asked when I visit your enormous construction plants and see the mass of aircraft be-

ing produced whether we shall ever be able to man them or whether we shall need them. The answer is categorically yes. We have never had enough aircraft and never will until the end of the war. The more aircraft we have the more crews we can train, and I can say that training is now being held up through inefficient aircraft. Squadrons are still waiting to be re-equipped with more modern aircraft that are in production. The answer to casualties is to replace them at once—more aircraft, more men. We have the means of doing it and it breaks the enemy's heart."

All of which is a tribute to both military and civilian personnel in our aviation schools. But one point frequently omitted in discussions of the millions being trained for aviation is that much of this wartime schooling is sponsored. Under war pressure, courses are "streamlined" to enable a soldier to do only one phase of a job well, or else diluted to cope with many jobs reasonably well. How many aviation technicians will be able, even if they desired, and even if the demand developed, to make their livings after the war as technicians without long refresher courses or much more instruction? This question should be asked when we hear talk of millions of men who will return from the fronts equipped to enter commercial aviation. It also poses another planning problem for those who will still be operating aviation schools after the war.

The Community Airport

VERY FEW AIRPORTS in this country were in the black financially when we entered the war. The new, model Washington National Airport was one of those few. Opened in June, 1941, utilizing the best designs and equipment that engineers could devise, it was inadequate in most respects when the first plane landed on it, yet it has remained financially self-supporting until this year when war restrictions on both air and auto travel are resulting in decreased revenues.

Yet, the significant fact is that despite these war difficulties Washington Airport might have shown a profit this year if its terminal had had more restaurant facilities, office space, maintenance facilities, storage areas, and concessions. The Airport's manager, Harvey Law, is convinced these demands will not only remain after the war but increase substantially.

For municipalities awake to the future, the case of Washington Airport should be a powerful argument for planning a vital facility which will not only spur trade in the area but furnish an opportunity to increase the City's income. The Airport's potential value in public service and recreation has been little appreciated.

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